

§ 415.37 Flight readiness and communications plan.

(a) *Flight readiness requirements.* An applicant shall designate an individual responsible for flight readiness. The applicant shall submit the following procedures for verifying readiness for safe flight:

(1) Launch readiness review procedures involving the applicant's flight safety personnel and federal launch range personnel involved in the launch. The procedures shall ensure a launch readiness review is conducted during which the individual designated under paragraph (a) of this section is provided with the following information to make a judgement as to flight readiness:

- (i) Flight-readiness of safety-related launch property and services to be provided by a federal launch range;
- (ii) Flight-readiness of launch vehicle and payload;
- (iii) Flight-readiness of flight safety systems;
- (iv) Mission rules and launch constraints;
- (v) Abort, hold and recycle procedures;
- (vi) Results of dress rehearsals and simulations conducted in accordance with paragraph (a)(4) of this section;
- (vii) Unresolved safety issues as of the launch readiness review and plans for addressing and resolving them; and
- (viii) Any additional safety information required by the individual designated under paragraph (a) of this section to determine flight readiness.

(2) Procedures that ensure mission constraints, rules and abort procedures are listed and consolidated in a safety directive or notebook approved by licensee flight safety and federal launch range personnel;

(3) Procedures that ensure currency and consistency of licensee and federal launch range countdown checklists;

(4) Dress rehearsal procedures that—

- (i) Ensure crew readiness under nominal and non-nominal flight conditions;
- (ii) Contain criteria for determining whether to dispense with one or more dress rehearsals; and
- (iii) Verify currency and consistency of licensee and federal launch range countdown checklists.

(5) Procedures for ensuring the licensee's flight safety personnel adhere to federal launch range crew rest rules.

(b) *Communications plan requirements.* An applicant shall submit a communications plan providing licensee and federal launch range personnel communications procedures during countdown and flight. Effective issuance and communication of safety-critical information during countdown shall include hold/resume, go/no go and abort commands by licensee and federal launch range personnel during countdown. The communications plan shall describe the authority of licensee and federal launch range personnel, by individual or position title, to issue these commands. The communications plan shall also ensure that—

(1) Communication networks are assigned so that personnel identified under paragraph (b) of this section have direct access to real-time safety-critical information required for issuing hold/resume, go/no go and abort decisions and commands;

(2) Personnel identified under paragraph (b) of this section monitor common intercom channel(s) during countdown and flight; and

(3) A protocol is established for utilizing defined radio telephone communications terminology.

(c) An applicant shall submit procedures that ensure that licensee and federal launch range personnel receive a copy of the communications plan required by paragraph (b) of this section, and that the federal launch range concurs in the communications plan.

§ 415.39 Safety at end of launch.

To obtain safety approval, an applicant must demonstrate for any proposed launch that for all launch vehicle stages or components that reach earth orbit—

(a) There will be no unplanned physical contact between the vehicle or its components and the payload after payload separation;

(b) Debris generation will not result from the conversion of energy sources into energy that fragments the vehicle or its components. Energy sources include chemical, pressure, and kinetic energy; and

(c) Stored energy will be removed by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy. Other equivalent procedures may be approved in the course of the licensing process.

§415.41 Accident investigation plan.

(a) An applicant shall submit an accident investigation plan (AIP) containing the applicant's procedures for reporting and responding to launch accidents, launch incidents, or other mishaps, as defined in §401.5 of this chapter. The AIP shall be signed by an individual authorized to sign and certify the application in accordance with §413.7(c) of this chapter, and the safety official designated under §415.33(b) of this subpart.

(b) *Reporting requirements.* An AIP shall provide for—

(1) Immediate notification to the Federal Aviation Administration (FAA) Washington Operations Center in case of a launch accident, a launch incident or a mishap that involves a fatality or serious injury (as defined in 49 CFR §830.2).

(2) Notification within 24 hours to the Associate Administrator for Commercial Space Transportation or the Federal Aviation Administration (FAA) Washington Operations Center in the event of a mishap, other than those in §415.41 (b) (1), that does not involve a fatality or serious injury (as defined in 49 CFR 830.2).

(3) Submission of a written preliminary report to the FAA, Associate Administrator for Commercial Space Transportation, in the event of a launch accident or launch incident, as defined in §401.5 of this chapter, within five days of the event. The report shall identify the event as either a launch accident or launch incident, and shall include the following information:

- (i) Date and time of occurrence;
- (ii) Description of event;
- (iii) Location of launch;
- (iv) Launch vehicle;
- (v) Any payload;
- (vi) Vehicle impact points outside designated impact lines, if applicable;

(vii) Number and general description of any injuries;

(viii) Property damage, if any, and an estimate of its value;

(ix) Identification of hazardous materials, as defined in §401.5 of this chapter, involved in the event, whether on the launch vehicle, payload, or on the ground;

(x) Action taken by any person to contain the consequences of the event; and

(xi) Weather conditions at the time of the event.

(c) *Response plan.* An AIP shall contain procedures that—

(1) Ensure the consequences of a launch accident, launch incident or other mishap are contained and minimized;

(2) Ensure data and physical evidence is preserved;

(3) Require the licensee to report to and cooperate with FAA and National Transportation Safety Board (NTSB) investigations and designate one or more points of contact for the FAA or NTSB; and

(4) Require the licensee to identify and adopt preventive measures for avoiding recurrence of the event.

(d) *Investigation plan.* An AIP shall contain—

(1) Procedures for investigating the cause of a launch accident, launch incident or other mishap;

(2) Procedures for reporting investigation results to the FAA; and

(3) Delineated responsibilities, including reporting responsibilities for personnel assigned to conduct investigations and for any one retained by the licensee to conduct or participate in investigations.

§415.43 Denial of safety approval.

The FAA notifies an applicant, in writing, if it has denied safety approval for a license application. The notice states the reasons for the FAA's determination. The applicant may respond to the reasons for the determination and request reconsideration.